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RE: Serial No. 08/949,988, filed October 14, 1997, Inventors: Kar W. Yung et al.
For "METHOD AND SYSTEM FOR MAXIMIZING SATELLITE CONSTELLATION COVERAGE", Examiner T. Dinh, Group Art Unit 3644
(Attorney Docket No. PD-96315)

In response to the Examiner's Answer mailed on January 2, 2002, transmitted herewith are copies of a Reply Brief (in triplicate) for the above-identified patent application which is on Appeal.

Vijayalakshmi D. Duraiswamy

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Reg. No. 31,505

PATENT
PD-96315

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	Kar W. Yung, et al.	Date: February 8, 2002
Serial No:	08/949,988	Group Art Unit: 3644
Filed:	October 14, 1997	Examiner: T. Dinh
Title:	**METHOD AND SYSTEM FOR MAXIMIZING SATELLITE CONSTELLATION COVERAGE**	

REPLY BRIEF

Box AF
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

The following Reply Brief is submitted in response to the Examiner's Answer mailed on January 2, 2002. Appellant believes that the Examiner has presented two new grounds of rejection each of which will be addressed individually below.

In the Examiner's response section, page 3, the Examiner states, "The Draim reference does not necessarily teaches continuous global coverage. As shown in Figure 3, a vast percentage of the southern hemisphere is not covered by the three satellites constellation as clearly shown in figure 3. Figure 3 shows that the area not covered by the three satellite constellation includes the southern tips of South America, Antarctica, and the vast part of the Indian, Pacific, and Atlantic Ocean." (Grammar not corrected).

The Examiner thus goes on to conclude that the Draim reference "teaches maximizing coverage at predetermined geographical areas at local predetermined peak times since the area that it covers (in Figure 3) is clearly the geographical area at local predetermined peak times."

This interpretation is simply not correct. Moreover, it is submitted that this argument misrepresents Appellant's arguments regarding the Draim reference as well as Appellant's claimed invention. Initially, regarding the Draim reference, Appellant has clearly pointed out in the Appeal Brief that Draim teaches a three (3) satellite constellation which gives "continuous hemispheric coverage" and a four (4) satellite constellation that gives "continuous global coverage." The Examiner confirms this in the Examiner's Answer.

However, continuous hemispherical coverage misses the mark with respect to Appellant's claimed invention. Appellant's claimed invention is not directed towards continuous hemispherical coverage. It focuses on a specific geographic location and directs maximum service at that location when maximum service is required, i.e., during that geographic location's local peak usage times. Similarly, when service is maximized at one geographic location, it is minimized or taken away altogether from another location. In accordance with the teachings of Draim, every location that receives continuous hemispherical coverage receives the same coverage at all times. Thus, while coverage may be provided at local peak times, the coverage stays the same and is clearly

not increased or maximized. Accordingly, continuous hemispherical coverage does not teach nor suggest maximizing coverage at geographical areas at local predetermined peak times.

The second new ground of rejection begins on page 4 of the Examiner's Answer. On page 4, the Examiner states, "As for the Applicant's argument on the Westerlund reference, the Examiner respectfully disagrees. It is believed that one skilled in the art (especially those skilled in the art of aerospace/orbital mechanics) essentially knows that by changing the tilting of the trajectory of a satellite constellation, a different area of coverage would be in effect. Westerlund is further used to demonstrate that by tilting the trajectory of a satellite constellation, a different area would be covered....In this case, if one would like to cover the tip of South America, Antarctica, the Southern part of the Indian, Pacific and Atlantic, one would certainly tilt the constellation of satellites (in Figure 3) to cover these desired areas." (Grammar not corrected).

Contrary to the Examiner's contention, however, Westerlund does not teach the tilting of the trajectory of a satellite constellation to change the area of coverage. The invention of Westerlund teaches orienting a satellite that is in a geosynchronous orbit to direct a beam from the satellite's antenna to cover a desired target site and pointing the beam axis at a desired target site. The problem addressed by Westerlund was how to keep the satellite oriented such that the antenna mounted thereon is continually pointed at the desired bore site target. Westerlund teaches accomplishing this through various

satellite stationkeeping methods. This is because, as stated in Column 7, beginning at line 20 of the reference, various phenomena can cause the orbital plane to tilt and thus slowly cause the beam axis to be pointed slightly away from the bore site target. Westerlund seeks to avoid this tilt and therefore discloses a method for maintaining the satellite antenna directed at the bore site target at all times with utilization of minimal fuel and other resources. Westerlund is not at all concerned with tilting the satellite to cover a different area, but instead is concerned with correcting any wandering of the satellite due to various forces acting on the satellite during its orbit as is well known in the art and as is covered by various other different techniques, to maintain the satellite in its predetermined orbit.

Accordingly, there is simply no teaching or suggestion of utilizing the Westerlund system to cover different areas of the earth, only to direct the satellite beam at a specific bore target and to keep it there in the event it wanders due to gravitational forces such as from the sun or other phenomena.

For the reasons set forth above and for the reasons set forth in Appeal Brief, Appellant respectfully requests the Board to reconsider the present application and allow each of the claims.

Respectfully submitted,

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Dated: February 8, 2002

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